Delta Stewardship Council

Committed to Achieving the Coequal Goals

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A Good Place to Start

Randy Fiorini

Vice Chair
Delta Stewardship Council

"By standing on the shoulders of those who came before, we can see even greater things to come." Wilbur and Orville Wright, circa 1903

The Wright brothers are credited with successfully launching the Aerial Age. From the sand dunes of Kitty Hawk, N. C. on Dec. 17, 1903, the Wright Flyer made four flights, the best covering 852 feet in 59 seconds. This heavier-than-air, powered flying machine was the first to make a sustained, controlled flight with a pilot on board.

I have been asked to write about California water policy. So why have I started it with a reference to the Wright brothers legacy?

The answer is simple. As Californians seek to find answers to the vexing problems related to our water supply; criticism and negativity are rampant. I imagine the Wright brothers faced a lot of criticism and negativity as they attempted to bring their vision to life. California suffers from serious financial problems that now dominate every public policy discussion. The "can do" attitude that this great state was famous for has regrettably, but understandably, become "can't do." The Golden State desperately needs a vision for a more optimistic future. I can't think of a better place to apply a large dose of optimism than to the ever-important water policy discussion.

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deltacouncil.ca.gov

Delta ISB to Council: Science Alone Can't Rank Stressors

Stressors on the Delta are interactive and complex

Despite hope that best available science would provide a ranking system for stressors, the Delta Independent Science Board found that prioritization cannot be done using science alone.

Examples of stressors in the Delta include: wastewater pollution, agricultural run-off, federal, state and local pumping diversions, competition from non-native fish and plant species, temperature change and sea level rise due to the effects of climate change, and other pollutants.

Responding to a request from some members of the California Legislature and the Delta Stewardship Council, the Delta ISB recently released its report on stressors in the Delta, and reported its findings at the Council's January meeting.

"There is no objective, scientifically agreed upon method for prioritizing multiple stressors," Delta ISB Chair Dr. Richard Norgaard told the Council. "Stressors and the objectives we are trying to reach have to be thought about together."

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The Delta Independent Science Board asked the Council to think about stressors in the Delta as a long Mobius strip where one stressor is not more important than another.

Member Spotlight

Johnston Has Decades in the Delta

Photo courtesy of the Delta Stewardship Council

Patrick Johnston

Delta Stewardship Councilmember

Principal author of the Delta Protection Act of 1992

After serving on the Delta Protection Commission and the Bay-Delta Authority, along with two decades in the California Legislature – where he was the principal author of the Delta Protection Act of 1992 – Patrick Johnston's leadership in this vital estuary now extends to his seat on the Delta Stewardship Council.

Created by the Legislature in November 2009, the Council is a state agency that has been charged with developing a Delta Plan – a comprehensive set of policies and regulations to guide future activities in the Sacramento-San Joaquin Delta, or anywhere in the state that either affects or benefits from the Delta. The Council's work is guided by the coequal goals set by statute: a restored Delta ecosystem and a reliable source of water for California, along with the recognition of the Delta as an evolving place.

"The Council and the new law offer an opportunity to improve the Delta ecosystem and improve the state's water supply," said Johnston, who is currently president and chief executive officer of the California Association of Health Plans. "Water policy requires the political system to resolve problems of allocation based on science and rational debate."

The 738,000-acre estuary supplies drinking water to about 25 million Californians and is home to nearly 1,000 species of plants and fish and other animals, some of which are endangered or threatened. It is also a vital source of water supply to California's multibillion-dollar agricultural industry.

Johnston said his time on the Council (he was appointed last year by the Senate Rules Committee at the recommendation of Senate President Darrell Steinberg) has been marked by work with members who have "asked far more questions than they have offered opinions."

"That is a good thing," he said. "Council staff makes the substantial input from the public, stakeholders and consultants readily available to everyone."

If there's one thing the public should know about the Council's efforts, Johnston says it's this: "Everything counts – including exports, diversions, pollution, climate change, seismic activity and other stressors on the Delta and water systems."

Johnston, who lives in Stockton, served 20 years in the California Legislature, including 10 in the Assembly and 10 in the Senate. He chaired the Senate Committee on Appropriations for six years and chaired the Assembly Committee on Finance and Insurance for four years. For 10 years, he taught public policy for the University of California, California State University and University of the Pacific.

Johnston is an advisory board member of the Nicholas C. Petris Center on Health Care Markets and Consumer Welfare at UC Berkeley. He holds undergraduate and masters degrees from St. Patrick's College and CSU Sacramento.

First Draft Delta Plan to be released Feb. 14

The first public draft of the Delta Plan is expected to be released on Feb. 14. This will be the first of four drafts released before the administrative draft is released in June 2011 as part of the formal environmental review process.

The Council has worked diligently with federal, state and local agencies and the public to develop this Delta Plan draft, hosting workshops and scoping meetings in compliance with the environmental review process. The Council will meet every two weeks to consider subsequent drafts of the Delta Plan in March, April and May. Once complete, the Delta Plan will be a legally enforceable, comprehensive, long-term management plan for the Delta, updated every five years.

For agenda and meeting materials and to watch live or archived Council meetings, visit **HERE.**

Future Quake Would Threaten Delta Levees

Warnings from USGS are more dire than previously thought

A major earthquake could have a greater impact on the Sacramento-San Joaquin Delta than previously estimated and could happen at any time, according to experts at the US Geological Survey.

> **"Somewhere, somebody has got to bite the bullet. Something has to be put in place to keep the whole thing from falling apart."**
>
> ***Dr. David Schwartz, senior earthquake geologist.***

"You can run, but you can't hide," said Dr. David Schwartz in a presentation to the Delta Stewardship Council during its January meeting, noting that significant impacts can occur at considerable distance from an earthquake's epicenter. Schwartz is a senior earthquake geologist with the federal agency.

The USGS said the Delta region is most vulnerable to, and will be most impacted by, the large-plate boundary faults in the East Bay.

The Council requested the USGS presentation because it must use best available science in making policy recommendations in the Delta Plan. Section 85305, subsection (g), of the Delta Reform Act requires the Council to "reduce risks to people, property, and state interests in the Delta by effective emergency preparedness, appropriate land uses, and investments in flood protection."

Scientists at the USGS say that in the next 100 years there will be strong shaking in the Delta because of an East Bay earthquake and that could lead to wide-scale levee failure. The 1906 earthquake was so strong it released all of the stress in the entire region, and over the last 100 years that stress has returned, Schwartz said. The USGS believes we are entering a period similar to pre-1906 conditions, when the region was hit with more frequent medium and large earthquakes.

"Somewhere, somebody has got to bite the bullet," Schwartz told the Council. "Something has to be put in place to keep the whole thing from falling apart."

*See **Quake**, Page 6*

Scientists Brief Council on Flow Studies

Discussion on flows will help guide Delta Plan development

How in-stream flow requirements should be addressed in the Delta Plan was the topic of in-depth discussion at the Delta Stewardship Council's January meeting. The Delta Reform Act requires the Council to consider flow criteria developed last year by the State Water Resources Control Board and the Department of Fish and Game in drafting the Delta Plan.

Courtesy of California Department of Water Resources

The Delta Reform Act requires the Council to consider flow criteria developed last year by the State Water Resources Control Board and the Department of Fish and Game in developing the Delta Plan.

Having heard earlier presentations from the two state agencies, the Council learned how flow requirements have been considered for other rivers and streams in the United States and elsewhere in the world.

Council Chair Phil Isenberg set the tone for the discussion – how to address flow requirements in the Delta while still achieving the coequal goals of water supply reliability and a healthy ecosystem. "I'm drawn to an analysis that tries to balance the use of human demand for absolute guaranteed levels of water most of the time, with the fact that you have to adjust it depending on the hydrology and all the other conditions. But I want to know how you build the ecosystem into that kind of equation to see how we could meet the coequal goals."

The Council heard presentations from its Lead Scientist Dr. Cliff Dahm and Dr. Lucas Paz, a consultant with Arcadis.

Dr. Dahm led the discussion by giving an overview on scientific methodologies for setting flow criteria for rivers and estuaries. He gave examples of processes for setting flow criteria in Florida and Texas and in South Africa and Australia. Dahm also presented an overview of some practical approaches and methodologies used to set flow criteria.

*See **Flow**, Page 7*

Fiorini, *Continued from Page 1*

Beginning in the 1880s, California earned a well-deserved reputation for constructing "world class" water storage and delivery projects. Local, state and federal projects such as the Los Angeles Aqueduct, San Francisco's Hetch Hetchy Project, East Bay MUD's Pardee Dam and Aqueduct, the Colorado River Aqueduct, the federal Central Valley Project (CVP) and the State Water Project (SWP), to name a few, were engineering marvels. All were designed to extract and store water in areas of sufficiency, then deliver that water to areas of growth and need.

The ensuing economic vitality and growth in California can be directly attributed to the development of a reliable water supply. California has been well served by many local, state and federal water projects that supply our thirsty state with water for our families, farms and factories. But the same water supply systems that were once widely celebrated by a majority of Californians have become the subject of much criticism and controversy.

In 1968, when the first water deliveries were made from the newly constructed State Water Project, there were signs that a new environmental consciousness was beginning to take shape in California. After nearly 100 years of building dams, canals and pipelines to meet the growing demands for a reliable water supply, concerns about water quality and environmental impacts began to emerge. With the benefit of hindsight we now realize that the 1960s marked the end of an era -- the era of water extraction.

The 1970s marked the beginning of the era of sustainability. Congress responded to concerns about the environment by passing several landmark environmental laws including the Clean Air Act, the National Environment Policy Act that created the federal Environmental Protection Agency, the Water Pollution Control Act Amendment, the Endangered Species Act, the Safe Drinking Water Act, the Resource Conservation and Recovery Act, and the Water Pollution Control Act Amendments, which became known as the Clean Water Act. These acts set a much more demanding threshold for water supply project designs and permits.

It should be no surprise that we now have a conflict with the water supply systems that were designed and built decades ago to extract and convey water that serve a society that views the environment as a finite resource worth protecting. The CVP and the SWP, California's largest water projects, were not designed with the goal of ecosystem compatibility and enhancement. To further today's difficulties, each system depends upon the environmentally sensitive San Joaquin-Sacramento River Delta to convey water to the export pumps located at the southern edge of the Delta.

Following decades of discussion and frustration over the conflict between water extraction and sustainability, the California Legislature took a bold step to reconcile California's need for a reliable water supply with an equal emphasis on environmental values. The Delta Reform Act of 2009 clearly stated that water policy initiatives must place equal emphasis upon water supply reliability and ecosystem health. These coequal goals are now more than a wish or a suggestion. The coequal goals are now law and will become the foundation upon which a new era in water supply operations will be based.

Finding durable solutions to achieve the coequal goals begins with the understanding of the strengths and weaknesses of the water conveyance system we now have: a system designed to extract and move water. Addressing the weaknesses of the current system can lead to a new vision for a modernized water system designed not only to provide a reliable water supply for California but sustain and enhance the Delta environment as well. That vision will require a comprehensive set of solutions and a significant investment in infrastructure improvements to provide the flexibility necessary to meet the coequal goals.

Let me be clear: there is enough water to meet the current and future needs for California's economy and for the environment if it is managed properly. The solutions for tomorrow will look much different than the solutions of the past.

The success of the Wright brothers changed the way people all over the world view travel. These two bicycle shop operators overcame what must have seemed at that time insurmountable obstacles to accomplish the impossible. In a sense, the Wright brothers made bicycles fly. Certainly with all of our knowledge and ability, we too can achieve what seems impossible. Sustainable solutions to our water challenges are needed now. Reviving the California "can do" attitude is a good place to start.

Stressors, *Continued from Page 1*

Norgaard asked the Council not to think of the report as a list, but rather as a "Mobius strip," with no one stressor, or group of stressors, more important than another.

"The stressors are interactive and complex. [Ranking stressors] is going to be a judgment call on the political side and on the scientific side," Norgaard said. "The importance of the objectives will tell us about the importance of the stressors."

Norgaard also said that the state of the research is not advanced enough to accurately rank the most harmful stressors in the Delta.

"We are not in a position now to say that these three stressors are causing 90 percent of the problem, or it's this one stressor that is causing 45 percent of the problem," Norgaard said. "At the present state of the knowledge we just think there are a lot of interactive stressors."

Even though the Delta ISB was unable to provide a cut-and-dried, ranked list, it did provide the Council with a way to think about the subject.

The Delta ISB's report organized stressors into four categories: global stressors, legacy stressors, anticipated stressors and current stressors.

According to the report, global stressors are those that have to be adapted to, like climate change and population growth. Legacy stressors are human-caused actions, such as the continuing effects of sediment and mercury discharge from the gold mining era. Anticipated stressors are stressors that can be anticipated and will result from present or future activities.

Current stressors are ongoing activities like water management practices, agricultural practices and waste discharges that can be changed or steps taken to reduce their effects on the Delta, or both.

While the natural conclusion would be to concentrate on the current stressors, Norgaard warned the Council not to get too bogged down by focusing on the next few years alone.

"It is worrisome to me that the Council will feel pressure to address current stressors rather than to think out into your second and third timeframe and that [current stressors] will absorb too much of your time," Norgaard said. "Keep your mind on 30 to 50 years out."

Council Vice Chair Randy Fiorini was complimentary of the Delta ISB's report.

The Delta Stewardship Council must use a mixture of best available and political judgments to address stressors in the Delta Plan.

"This is very useful. It's written in terms we all understand and it outlines how complex the issues that we're dealing with are," Fiorini said.

The Council also asked the Delta ISB to weigh in on parts of the Delta Plan that require the best available scientific advice.

"It will be valuable to us if you look at the Delta Plan and see if it is focused on the stressors that [the Delta ISB] thinks are appropriate," Council Executive Officer Joe Grindstaff said, "and tell us what needs to be added in to restore the ecosystem."

Councilmember Felicia Marcus took her request a step further.

"We need to get our scientists to a place where they can say 'On balance, this package of things will be better,' and articulate how we can get in front of the curve," Marcus said. "We need [the Delta ISB] to step out and help us a little more than saying 'no this, not that, no that's too hard,' because then it becomes an interesting intellectual exercise that's really expensive and not that useful."

Norgaard promised that the Delta ISB would continue to interact with the Council by reviewing the upcoming drafts of the Delta Plan as they are released.

"The blending of science and politics will come from the iterations of the Plan rather than us sitting in a backroom debating," Norgaard said.

To view the full Delta ISB report on stressors, please visit the Council's website **HERE.**

Quake, *Continued from Page 3*

For years, experts agreed that many Delta levees would fail during a significant earthquake, flooding the region and threatening the state's water supply, but reliable information was hard to come by.

Previously, scientists had believed the peat soils of the Delta would "dampen" seismic waves, but the USGS has now discovered that the make up of the Delta is so complex and varied that an earthquake could actually amplify shaking in some cases. This means levees would shake harder and could result in multiple failures.

The Delta Risk Management Study had predicted that as many as 20 islands could flood simultaneously in a major quake. Not only is this a concern for the Delta itself, but a massive levee failure would allow salt water to invade the Delta from the San Francisco Bay and shut off the fresh water supply for millions of Californians.

But there are some who question whether concerns about levees aren't masking other motives.

"All the hype about levee strength is just another thing to throw out there to prove the Delta is unsustainable and in danger," said Delta farmer Mike Robinson. "I don't agree with that. And it's another thing to justify a canal or a pipeline."

Whichever direction the Delta Plan takes regarding levees, the Council will depend on science and facts to respect the coequal goals of ecosystem restoration and water supply preservation.

"A group of people will soon be saying the state should be protecting every levee every place," said Council Chair Phil Isenberg. "Then there will be those who say [an earthquake] hasn't happened in 100 years so it probably won't happen. Everyone will have an opinion about what should or shouldn't be done and we need to figure it out."

Council member Felicia Marcus laid the groundwork for future discussions by asking what the Council should recommend. "One scenario you can take from this presentation is 'oh, my God, we should abandon the Delta or armor the Delta' but what recommendations and suggestions should we be looking at?"

The Council will use the science provided by the USGS and others to help develop policy recommendations in the upcoming Delta Plan. The Plan will suggest an organization or prioritization of where to concentrate investments in levee repair and public health, construction, and safety protection in the Delta.

To view the USGS PowerPoint presentation, please visit **HERE.**

A major earthquake could have a greater impact on the Sacramento-San Joaquin Delta than previously estimated and could happen at any time.

Regional conversations lead to common themes

Delta Stewardship Council concludes scoping meetings

Common themes and questions arose during the seven Delta Stewardship Council scoping meetings that took place Jan. 18 – 26, around the state.

Scoping meetings are for the stakeholders to share with the Council local knowledge that will help shape the Delta Plan, and to suggest strategies and alternatives that it should consider. What Council members and staff heard reflects much of the competing views of water supply, ecosystem enhancement and Delta protection that has colored discussions for decades. They also listened to concerns about future impacts of climate change, how other plans such as the BDCP relate to the Delta Plan, and whether the Plan should address issues such as water storage, water rights and water use efficiency that affect the Delta but are broader than its geographic scope.

The Council will use the comments received at the meetings and those that were sent by mail and email to further develop the Delta Plan. The first draft is expected to be released on Feb. 14.

A full report on the scoping meetings will be presented to the Council in February. In the meantime, to hear audio and view the notes of each scoping meeting, please visit **HERE.**

Flow, *Continued from Page 3*

He used an example of a river in Florida where the annual hydrograph was divided into three blocks: low flow, base flow, and high flow periods. Flow criteria was established for each period using hydrologic models and models of the needs of specific fish species throughout their life cycles. This approach leads to a percentage of allowable flow reduction in each segment of the hydrograph to protect the ecosystem and provide water supply.

> **"The decisions we will have to make on flow will be a mixture of scientific advice and political judgments."**
> ***Chair Phil Isenberg***

He then presented, with the assistance of Senior Water Resources Engineer Chris Enright, some preliminary analyses for the Delta using this methodology. One analysis showed that a 25-33 percent flow reduction linked to the annual hydrographs for rivers entering the Delta yielded exports comparable to those actually permitted from 1990-1999 and from 2000-2009.

Dr. Paz later presented an overview of performance measures designed to evaluate the effectiveness of flow standards on large-scale restoration programs. He gave examples from Puget Sound, the Lower Columbia River and the Lower Colorado River.

In his presentation, Dr. Paz explained that a single minimum flow level at all times of the year does not provide adequate protection to the Delta ecosystem. Paz suggested going beyond a minimal flow standard by creating functional flows; in essence, mimicking the natural hydrograph that is needed to support ecosystem processes.

Council Vice Chair Randy Fiorini said he is troubled by scientific reports that focus on flow as the main problem in the Delta and the theory that simply fixing flow will solve the Delta's problems. "There's a lot more going on that needs to be solved that can be solved with other measures than simply adjusting flows," Fiorini said.

Dr. Paz explained that a useful tool could be the establishment of an export/inflow ratio set for each week or month. "It would allow exports to occur when there is significant inflow to the system," Paz said. "In order to maintain the natural hydrograph, which is an ultimate goal from an ecological perspective, you can still maintain that pattern and still draw a significant amount of water to support water supply needs if a set of rules are established in order to do so."

Joe Grindstaff, Council executive officer, pointed out the challenge with that type of prescription. "When you get to a very dry year and you have to mimic the natural hydrology," he said, "you'll end up changing the salinity of the Delta and causing problems for farmers in the Delta who rely on water for agricultural purposes."

Grindstaff explained it is not the role of the Council to set flow standards in the Delta. The State Water Board is the regulatory entity required to set flows. "We will have to say something in the Delta Plan in respect to flows, in essence giving some thought and passing it on to the State Water Board," Grindstaff told the Council.

Chair Isenberg recognized the difficulty of addressing Delta flows as he closed discussion on the topic. "The decisions we will have to make on flow will be a mixture of scientific advice and political judgments," he said. "How to construct a Delta Plan that assists in leading to what the law currently requires, which is periodically setting Delta flow requirements, without allowing politics to intervene will be critical."